

# **Installing System Memory in a BayStack ARN Router**

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November 1996



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## Electromagnetic Emissions

Meets requirements of:

FCC Part 15, Class A

EN 55 022 (CISPR 22:1985), Class A <and Class B>

VCCI Class 1 ITE

## Canada Requirements Only

### Canada CS-03 Rules and Regulations

**Note:** The Canadian Department of Communications label identifies certified equipment. The certification means that the equipment meets certain telecommunications network protective operations and safety requirements. The Department does not guarantee the equipment will operate to the user's satisfaction.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. In some cases, the company's inside wiring associated with a single line individual service may be extended by means of a certified connector assembly (telephone extension cord). The customer should be aware that compliance with the above conditions may not prevent the degradation of service in some situations.

Repairs to certified equipment should be made by an authorized Canadian maintenance facility designated by the supplier. Any repairs or alterations made by the user to this equipment or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment.

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.

**Caution:** Users should not attempt to make such connections themselves, but should contact the appropriate electric inspection authority, or electrician, as appropriate.

### Canada CS-03 -- Règles et règlements

**Note:** L'étiquette du ministère des Communications du Canada indique que l'appareillage est certifié, c'est-à-dire qu'il respecte certaines exigences de sécurité et de fonctionnement visant les réseaux de télécommunications. Le ministère ne garantit pas que l'appareillage fonctionnera à la satisfaction de l'utilisateur.

Avant d'installer l'appareillage, s'assurer qu'il peut être branché aux installations du service de télécommunications local. L'appareillage doit aussi être raccordé selon des méthodes acceptées. Dans certains cas, le câblage interne du service de télécommunications utilisé pour une ligne individuelle peut être allongé au moyen d'un connecteur certifié (prolongateur téléphonique). Le client doit toutefois prendre note qu'une telle installation n'assure pas un service parfait en tout temps.

Les réparations de l'appareillage certifié devraient être confiées à un service d'entretien canadien désigné par le fournisseur. En cas de réparation ou de modification effectuées par l'utilisateur ou de mauvais fonctionnement de l'appareillage, le service de télécommunications peut demander le débranchement de l'appareillage.

Pour leur propre sécurité, les utilisateurs devraient s'assurer que les mises à la terre des lignes de distribution d'électricité, des lignes téléphoniques et de la tuyauterie métallique interne sont raccordées ensemble. Cette mesure de sécurité est particulièrement importante en milieu rural.

**Attention:** Les utilisateurs ne doivent pas procéder à ces raccordements eux-mêmes mais doivent plutôt faire appel aux pouvoirs de réglementation en cause ou à un électricien, selon le cas.

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## Canada Requirements Only *(continued)*

### D. O. C. Explanatory Notes: Equipment Attachment Limitations

The Canadian Department of Communications label identifies certified equipment. This certification meets certain telecommunication network protective, operational and safety requirements. The department does not guarantee the equipment will operate to the users satisfaction.

Before installing the equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. In some cases, the company's inside wiring associated with a single line individual service may be extended by means of a certified connector assembly (telephone extension cord). The customer should be aware that compliance with the above condition may not prevent degradation of service in some situations.

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**Caution:** Users should not attempt to make such connections themselves, but should contact the appropriate electrical inspection authority, or electrician, as appropriate.

### Notes explicatives du ministère des Communications: limites visant les accessoires

L'étiquette du ministère des Communications du Canada indique que l'appareillage est certifié, c'est-à-dire qu'il respecte certaines exigences de sécurité et de fonctionnement visant les réseaux de télécommunications. Le ministère ne garantit pas que l'appareillage fonctionnera à la satisfaction de l'utilisateur.

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**Attention:** Les utilisateurs ne doivent pas procéder à ces raccordements eux-mêmes mais doivent plutôt faire appel aux pouvoirs de réglementation en cause ou à un électricien, selon le cas.

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## **Canada Requirements Only** *(continued)*

### **Canadian Department of Communications Radio Interference Regulations**

This digital apparatus (Access Feeder Node, Access Link Node, Access Node, Access Stack Node, Backbone Concentrator Node, Backbone Concentrator Node Switch, Backbone Link Node, Backbone Link Node Switch, Concentrator Node, Feeder Node, Link Node) does not exceed the Class A limits for radio-noise emissions from digital apparatus as set out in the Radio Interference Regulations of the Canadian Department of Communications.

### **Règlement sur le brouillage radioélectrique du ministère des Communications**

Cet appareil numérique (Access Feeder Node, Access Link Node, Access Node, Access Stack Node, Backbone Concentrator Node, Backbone Concentrator Node Switch, Backbone Link Node, Backbone Link Node Switch, Concentrator Node, Feeder Node, Link Node) respecte les limites de bruits radioélectriques visant les appareils numériques de classe A prescrites dans le Règlement sur le brouillage radioélectrique du ministère des Communications du Canada.

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# Contents

## About This Guide

Before You Begin .....	xv
Conventions .....	xv
Acronyms .....	xv
Ordering Bay Networks Publications .....	xvi

## Technical Support and Online Services

Bay Networks Customer Service .....	xviii
Bay Networks Information Services .....	xix
World Wide Web .....	xix
Customer Service FTP .....	xix
Support Source CD .....	xx
CompuServe .....	xx
InfoFACTS .....	xxi
How to Get Help .....	xxi

## Chapter 1 Installing the Memory Module

Opening the ARN .....	1-1
Removing an Installed Memory Module .....	1-4
Installing a Memory Module .....	1-6
Closing the ARN .....	1-8
Ensuring a Successful Installation .....	1-9
Your Next Step .....	1-10



# Figures

Figure 1-1.	ARN Power Switch (Off) and Cables .....	1-2
Figure 1-2.	Loosening the Captive Screws .....	1-2
Figure 1-3.	Removing the ARN Enclosure .....	1-3
Figure 1-4.	Location of the SIMM Connector on the Base Module .....	1-4
Figure 1-5.	Ejecting the Installed SIMM .....	1-5
Figure 1-6.	Removing the SIMM .....	1-5
Figure 1-7.	Positioning the SIMM .....	1-6
Figure 1-8.	Inserting the SIMM .....	1-7
Figure 1-9.	SIMM in Locked Position .....	1-7
Figure 1-10.	Replacing the ARN Cover .....	1-8
Figure 1-11.	ARN Base Module Diagnostic LEDs .....	1-9



# Tables

Table 1-1.    Boot Status LEDs ..... 1-10



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# About This Guide

If you are responsible for installing Bay Networks™ hardware, read this guide to learn how to install a system memory replacement or upgrade in a BayStack™ Advanced Remote Note™ (ARN™) router.

## Before You Begin

Make sure that you are running the latest version of Bay Networks Site Manager and router software. The ARN requires Router Software Version 11.00 Rev. 4n or later.

## Conventions

<i>italic text</i>	Indicates variable values in command syntax descriptions, new terms, file and directory names, and book titles.
quotation marks (“ ”)	Indicate the title of a chapter or section within a book.

## Acronyms

AUI	Attachment Unit Interface
DRAM	dynamic random access memory
SIMM	streamlined inline memory module
STP	shielded twisted-pair
UTP	unshielded twisted-pair

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# Technical Support and Online Services

To ensure comprehensive network support to our customers and partners worldwide, Bay Networks Customer Service has Technical Response Centers in key locations around the globe:

- Billerica, Massachusetts
- Santa Clara, California
- Sydney, Australia
- Tokyo, Japan
- Valbonne, France

The Technical Response Centers are connected via a redundant Frame Relay Network to a Common Problem Resolution system, enabling them to transmit and share information, and to provide live, around-the-clock support 365 days a year.

Bay Networks Information Services complement the Bay Networks Service program portfolio by giving customers and partners access to the most current technical and support information through a choice of access/retrieval means. These include the World Wide Web, CompuServe, Support Source CD, Customer Support FTP, and InfoFACTS document fax service.

## Bay Networks Customer Service

If you purchased your Bay Networks product from a distributor or authorized reseller, contact that distributor's or reseller's technical support staff for assistance with installation, configuration, troubleshooting, or integration issues.

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To purchase any of the Bay Networks support programs, or if you have questions on program features, use the following numbers:

Region	Telephone Number	Fax Number
United States and Canada	1-800-2LANWAN; enter Express Routing Code (ERC) 290 when prompted  (508) 436-8880 (direct)	(508) 670-8766
Europe	(33) 92-968-300	(33) 92-968-301
Asia/Pacific Region	(612) 9927-8800	(612) 9927-8811
Latin America	(407) 997-1713	(407) 997-1714

In addition, you can receive information on support programs from your local Bay Networks field sales office, or purchase Bay Networks support directly from your authorized partner.

## Bay Networks Information Services

Bay Networks Information Services provide up-to-date support information as a first-line resource for network administration, expansion, and maintenance. This information is available from a variety of sources.

### World Wide Web

The Bay Networks Customer Support Web Server offers a diverse library of technical documents, software agents, and other important technical information to Bay Networks customers and partners.

A special benefit for contracted customers and resellers is the ability to access the Web Server to perform Case Management. This feature enables your support staff to interact directly with the network experts in our worldwide Technical Response Centers. A registered contact with a valid Site ID can

- View a listing of support cases and determine the current status of any open case. Case history data includes severity designation, and telephone, e-mail, or other logs associated with the case.
- Customize the listing of cases according to a variety of criteria, including date, severity, status, and case ID.
- Log notes to existing open cases.
- Create new cases for rapid, efficient handling of noncritical network situations.
- Communicate directly via e-mail with the specific technical resources assigned to your case.

The Bay Networks URL is *<http://www.baynetworks.com>*. Customer Service is a menu item on that home page.

### Customer Service FTP

Accessible via URL *<ftp://support.baynetworks.com>* (134.177.3.26), this site combines and organizes support files and documentation from across the Bay Networks product suite, including switching products from our Centillion™ and Xylogics® business units. Central management and sponsorship of this FTP site lets you quickly locate information on any of your Bay Networks products.

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This CD-ROM -- sent quarterly to all contracted customers -- is a complete Bay Networks Service troubleshooting knowledge database with an intelligent text search engine.

The Support Source CD contains extracts from our problem-tracking database; information from the Bay Networks Forum on CompuServe; comprehensive technical documentation, such as Customer Support Bulletins, Release Notes, software patches and fixes; and complete information on all Bay Networks Service programs.

You can run a single version on Macintosh Windows 3.1, Windows 95, Windows NT, DOS, or UNIX computing platforms. A Web links feature enables you to go directly from the CD to various Bay Networks Web pages.

## CompuServe

For assistance with noncritical network support issues, Bay Networks Information Services maintain an active forum on CompuServe, a global bulletin-board system. This forum provides file services, technology conferences, and a message section to get assistance from other users.

The message section is monitored by Bay Networks engineers, who provide assistance wherever possible. Customers and resellers holding Bay Networks service contracts also have access to special libraries for advanced levels of support documentation and software. To take advantage of CompuServe's recently enhanced menu options, the Bay Networks Forum has been re-engineered to allow links to our Web sites and FTP sites.

We recommend the use of CompuServe Information Manager software to access these Bay Networks Information Services resources. To open an account and receive a local dial-up number in the United States, call CompuServe at 1-800-524-3388. Outside the United States, call 1-614-529-1349, or your nearest CompuServe office. Ask for Representative No. 591. When you are on line with your CompuServe account, you can reach us with the command **GO BAYNET**.

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To use InfoFACTS in the United States or Canada, call toll-free 1-800-786-3228. Outside North America, toll calls can be made to 1-408-764-1002. In Europe, toll-free numbers are also available for contacting both InfoFACTS and CompuServe. Please check our Web page for the listing in your country.

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Use the following numbers to reach your Bay Networks Technical Response Center:

Technical Response Center	Telephone Number	Fax Number
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Santa Clara, CA	1-800-2LANWAN	(408) 764-1188
Valbonne, France	(33) 92-968-968	(33) 92-966-998
Sydney, Australia	(612) 9927-8800	(612) 9927-8811
Tokyo, Japan	(81) 3-5402-0180	(81) 3-5402-0173



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# Chapter 1

## Installing the Memory Module

Complete the steps in this chapter to upgrade or replace the dynamic random access memory (DRAM) in an ARN. The ARN base module contains one connector for a streamlined inline memory module (SIMM).

To physically install a memory SIMM, you

1. Open the ARN enclosure to access the component tray.
2. Attach an antistatic wrist strap.



**Caution:** Electrostatic discharge can damage hardware. You must wear the antistatic strap whenever you remove, install, or handle printed circuit boards.

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3. Remove the existing SIMM from the ARN base module.
4. Install the replacement or upgrade SIMM.
5. Close the ARN.
6. Reconnect the ARN to the network.

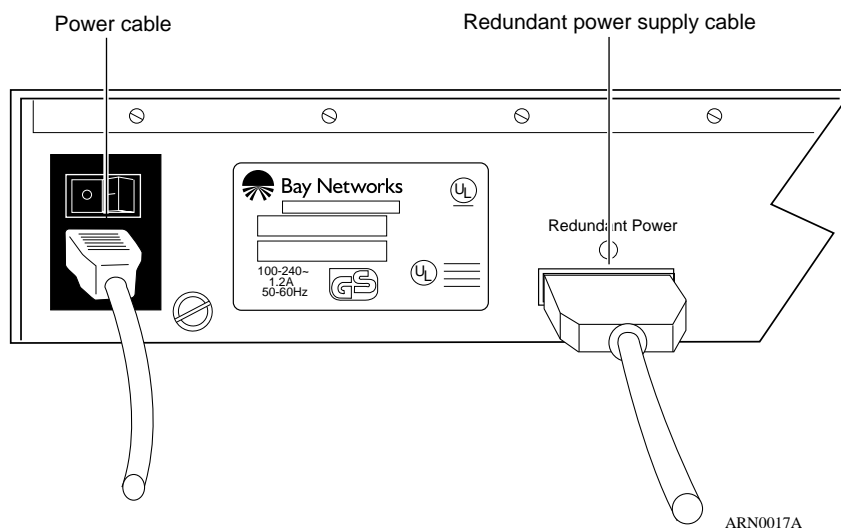
## Opening the ARN

To open the enclosure and expose the base module:

1. **Be sure that the ARN power switch is turned off (0).**
2. **Unplug the power cable from the wall receptacle and then from the ARN back panel ([Figure 1-1](#)).**

If present, unplug the redundant power supply cable.

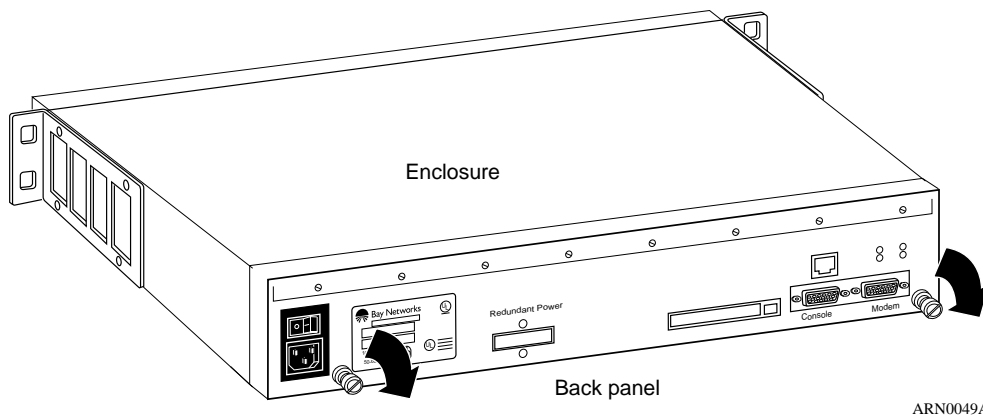
3. **Remove any console cabling from the back panel.**



**Figure 1-1. ARN Power Switch (Off) and Cables**

4. Remove all network cables from the front panel.
5. Loosen the two captive screws that secure the top enclosure to the ARN component tray ([Figure 1-2](#)).

Be sure to loosen the screws all the way.



**Figure 1-2. Loosening the Captive Screws**



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7. **Place the ARN tray on a table or other work area.**
8. **Attach an antistatic wrist strap before proceeding.**

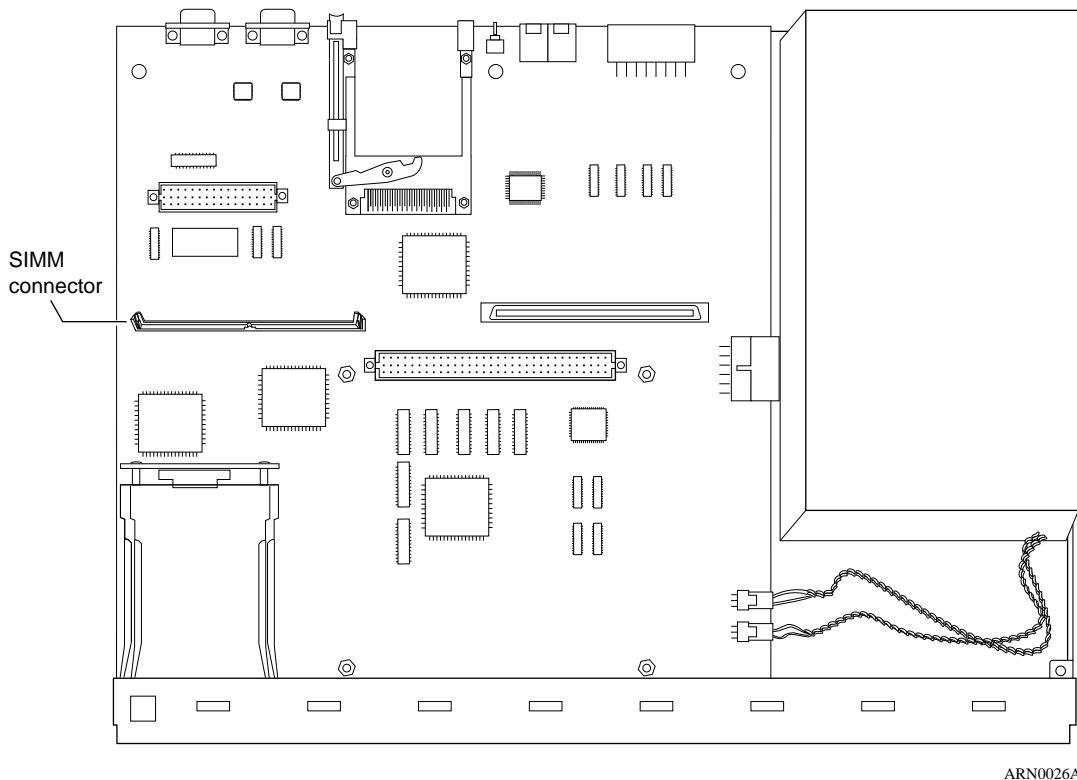
You receive an antistatic wrist strap with the ARN system and with the upgrade module shipment. Refer to the instructions in the wrist strap bag.

The antistatic wrist strap directs the discharge of static electricity from your body to the router chassis, thereby avoiding discharge to sensitive electronic components.

## Removing an Installed Memory Module

To remove the existing SIMM from the ARN base module:

1. **Locate the SIMM connector on the ARN base module** ([Figure 1-4](#)).

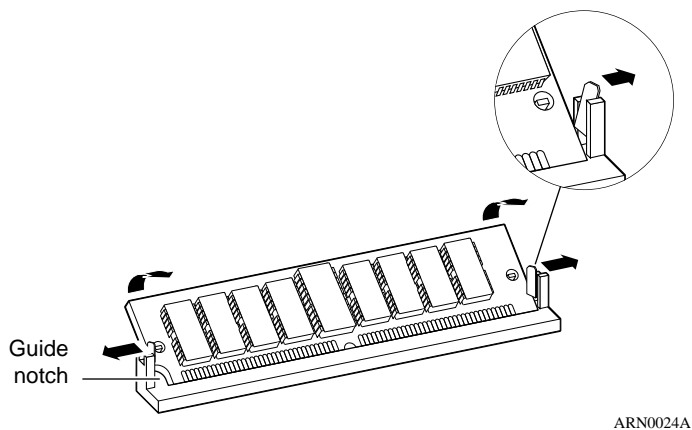


**Figure 1-4. Location of the SIMM Connector on the Base Module**

Note the spring latch at each end of the SIMM connector.

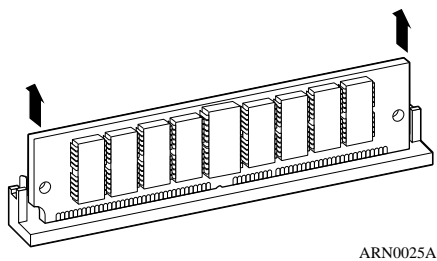
2. **Carefully press outward on the two spring latches until the SIMM ejects from the locking studs** ([Figure 1-5](#)).

Apply simultaneous pressure to both spring latches.



**Figure 1-5. Ejecting the Installed SIMM**

3. Rotate the SIMM upward and lift it out of its socket ([Figure 1-6](#)).



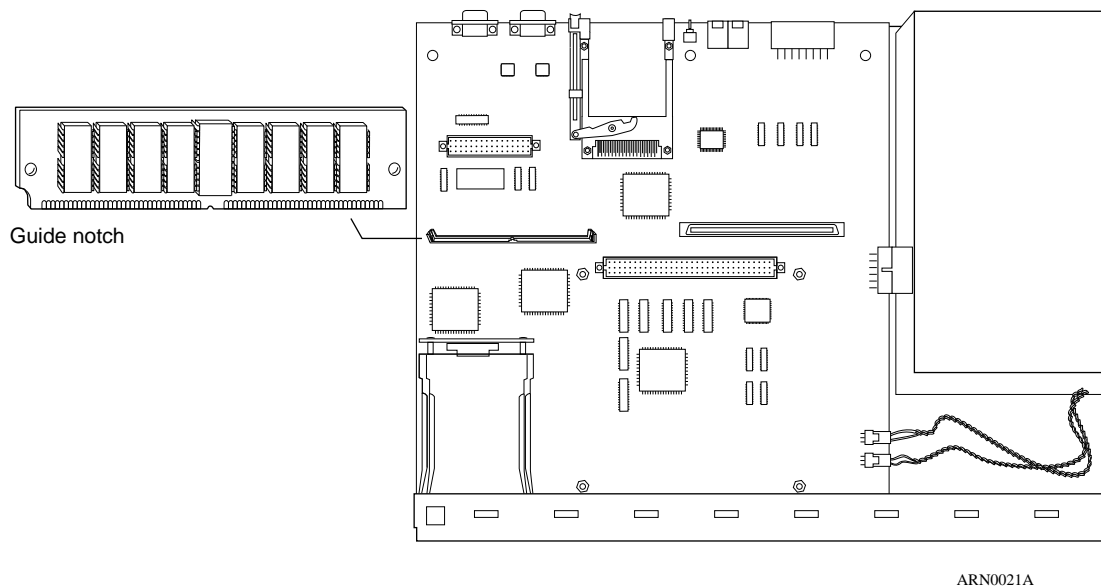
**Figure 1-6. Removing the SIMM**

4. Place the removed SIMM in an antistatic bag, or set it on an antistatic mat.

## Installing a Memory Module

To install the new SIMM:

1. **Holding the SIMM by its top corners (away from the connector edges), orient the SIMM so that the notch is at the bottom, facing the edge of the base module and tray assembly ([Figure 1-7](#)).**

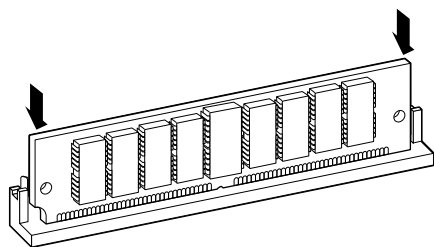


**Figure 1-7. Positioning the SIMM**

2. **Place the SIMM into the base module connector socket and press in to seat the SIMM firmly in the socket ([Figure 1-8](#)).**



**Caution:** The SIMM is keyed with the guide notch to prevent incorrect insertion. Do not force the SIMM if it does not go easily into the socket.



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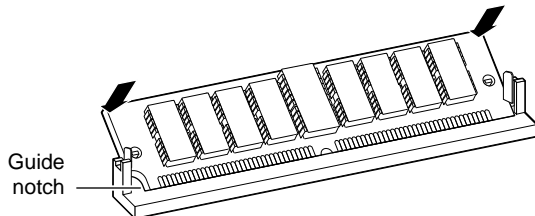
**Figure 1-8. Inserting the SIMM**

3. Tilt the SIMM down into its locked position ([Figure 1-9](#)).



**Caution:** It is normal to feel a slight resistance as the SIMM comes to its locked position, but be careful not to use too much force. It is easy to damage the SIMM socket by forcing it into the locked position.

You should hear a “click” as the spring latches engage the ends of the SIMM.



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**Figure 1-9. SIMM in Locked Position**

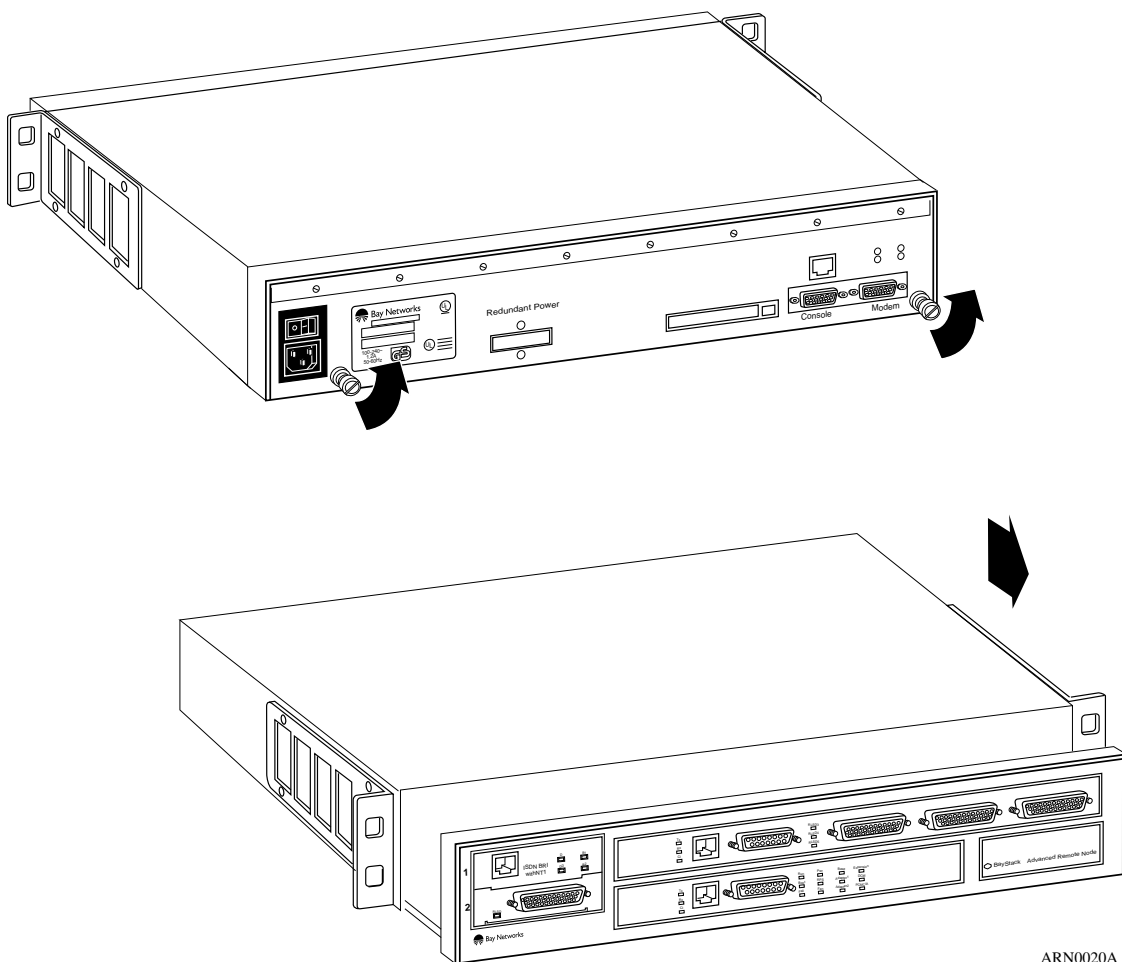
4. If the SIMM does not lock into place:
  - a. Remove the SIMM (refer to the previous section, “[Removing an Installed Memory Module](#)”).
  - b. Check the orientation of the guide notch ([refer to Figure 1-7](#)).
  - c. Reinsert the SIMM, wiggling it gently as you press it into the socket.
  - d. Try again to tilt it into its locked position.

## Closing the ARN

To replace the ARN enclosure:

1. **Remove the antistatic wrist strap.**
2. **Align the enclosure top around the base module component tray and slide the enclosure in until it meets the front panel ([Figure 1-10](#)).**

If you meet resistance, lift up slightly on the enclosure, and center the component tray between the enclosure edges.



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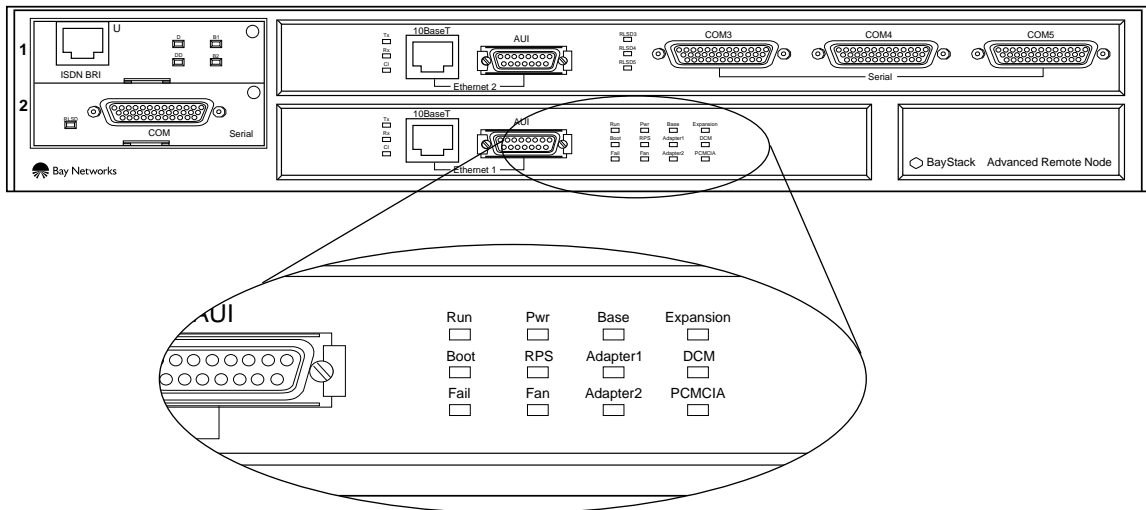
**Figure 1-10. Replacing the ARN Cover**

3. Secure the two captive screws that hold the cover to the component tray.
4. Reconnect any cabling you removed.
5. Plug in the power cord and, if applicable, the redundant power supply cable.

## Ensuring a Successful Installation

After reconnecting the ARN to the network, ensure a successful upgrade by checking the diagnostic LEDs on the front panel of the base module.

[Figure 1-11](#) shows the Ethernet or token ring base module front-panel LEDs.



ARN0059A

**Figure 1-11. ARN Base Module Diagnostic LEDs**

When you power on the ARN, the following sequence of front panel LED activity should occur:

1. All base module LEDs light momentarily; this tests that the LEDs are operational.
2. The Run, Boot, and Fail LEDs count through a short, initial startup sequence.
3. The Pwr (power) LED lights and remains on.

4. The Run LED begins flashing and continues to flash until the ARN completes all diagnostic tests.
5. As the diagnostic procedure tests each module, the LED representing that module flashes slowly. If the module passes its diagnostic test, the LED remains on. If the module fails its diagnostic test, the Fail LED remains on and the module LED flashes rapidly.
6. After completing the diagnostic testing procedure, the boot process begins. The Run and Boot LEDs indicate the boot status as shown in [Table 1-1](#).

**Table 1-1.      Boot Status LEDs**

Boot Status	Run LED	Boot LED
Local Boot	Off	On
Netboot (attempting)	Off	Flashing
Netboot (downloading)	Flashing	On
Interrupted (using ARN monitor)	Flashing	Flashing

7. After the boot process completes, the Run LED lights and the Boot LED turns off, indicating that the ARN is operational.

If the LEDs do not light in this sequence, the network administrator can refer to *Configuring Remote Access* to help troubleshoot the problem.



**Note:** If the ARN does not contain an expansion module, an adapter module, a redundant power supply, a data collection module, or a Flash card, the LEDs associated with these components remain off.

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If you need additional assistance, contact your local Bay Networks Technical Response Center.

## Your Next Step

To reconnect the ARN to the network, you need only reboot a valid configuration file. Refer to *Installing and Operating BayStack ARN Routers* or to the *Configuring Remote Access* guide for instructions.

Contact your network administrator if you need additional information.